



Oje

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Carlos F. Barbas, III et al.)
Application No. 10/078,757) NOW U.S. Patent No. 7,087,409 B2
Filed: February 19, 2002) Granted: August 8, 2006
For: HUMANIZATION OF MURINE)
ANTIBODY) Attorney Docket No. TSRI 598.0 Con.1

REQUEST FOR CERTIFICATE OF CORRECTION

Attention: Certificate of Correction Branch
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

United States Letters Patent No. 7,087,409 B2 was granted to Carlos F. Barbas, III and Christoph Rader on August 8, 2006, on the basis of the above application, and is assigned to The Scripps Research Institute. A number of printing errors were made by the Patent and Trademark Office during printing as summarized on the enclosed Patent Office Form PTO/SB/44 (37 pp.).

With regard to the error noted in Claim 1 (Column 44) please refer to the Examiner's Amendment, a copy of which is also enclosed herewith.

With regard to the Sequence Listing (depicted at Columns 21-44), a Replacement Sequence Listing was filed on February 2, 2006; however, the patent is printed with what appears to be the Sequence Listing as originally filed. Accordingly, the Replacement Sequence Listing is reproduced in full on the aforementioned Form PTO/SB/44.

It is requested that a Certificate of Correction be issued embodying the enclosed corrections.

Respectfully submitted,

By Talivaldis Cepuritis (Reg. No. 20,818)

Date: November 17, 2006

OLSON & HIERL, LTD.
20 N. Wacker Drive
36th Floor
Chicago, Illinois 60606
(312) 580-1180

NOV 27 2006

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Talivaldis Cepuritis on 05 January 2006.

This application has been amended as follows:

At the end of the claim 1, the term "whole antibody." has been deleted and is replaced by the phrase "whole antibody; wherein said preselected antigen is the same antigen recognized by the mouse monoclonal antibody".

At the end of the claim 5, the term "preselected antigen." has been deleted and is replaced by the phrase "preselected antigen; wherein said preselected antigen is the same antigen recognized by the mouse monoclonal antibody".

EXAMINER'S COMMENT

3. Support for the above Examiner's amendment can be found in the specification as filed at pages 25-26 and 31-36, which discloses the humanization of mouse monoclonal antibody LM609 by the presently claimed process wherein the humanized versions of the LM609 monoclonal antibody retain the antigen specificity of mouse monoclonal antibody LM609, i.e., human integrin $\alpha\beta_3$.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 1 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 6,

Line 11, "Tbr14" should be -- Thr14 --.

Column 8,

Line 2, "LCDR2" should be -- LCDR1 --.

Line 31, " γ_5 " should be -- β_5 --.

Column 9,

Line 24, "FL2 should be -- FR2 --.

Line 57, "HR 9537" should be -- HB 9537 --.

Column 44,

Lines 27-29, "wherein said humanized mouse monoclonal antibody binds the same antigen as the mouse monoclonal antibody." should be -- wherein said preselected antigen is the same antigen recognized by the mouse monoclonal antibody. --.

Sequence Listing:

The Sequence Listing depicted at Columns 21-44 should read as follows:

SEQUENCE LISTING

<160> NUMBER OF SEQUENCE ID NOS: 122

<210> SEQ ID NO 1

<211> LENGTH: 8

<212> TYPE: PRT

<213> ORGANISM: Mus Musculus

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.

20 North Wacker Drive, 36th Floor

Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 2 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

<400> SEQUENCE: 1
 His Asn Tyr Gly Ser Phe Ala Tyr
 1 5

<210> SEQ ID NO 2
 <211> LENGTH: 9
 <212> TYPE: PRT
 <213> ORGANISM: Mus Musculus

<400> SEQUENCE: 2
 Gln Gln Ser Asn Ser Trp Pro His Thr
 1 5

<210> SEQ ID NO 3
 <211> LENGTH: 37
 <212> TYPE: DNA
 <213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 3
 gggcccaaggc ggccgagctc cagatgaccc agtctcc

37

<210> SEQ ID NO 4
 <211> LENGTH: 37
 <212> TYPE: DNA
 <213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 4
 gggcccaaggc ggccgagctc gtgatgacyc agtctcc

37

<210> SEQ ID NO 5
 <211> LENGTH: 37
 <212> TYPE: DNA
 <213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 5
 gggcccaaggc ggccgagctc gtgwtgacrc agtctcc

37

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 3 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

<210> SEQ ID NO 6	
<211> LENGTH: 37	
<212> TYPE: DNA	
<213> ORGANISM: Homo Sapiens	
<400> SEQUENCE: 6	
ggggccaggc ggcgcgagctc acactcacgc agtctcc	37
<210> SEQ ID NO 7	
<211> LENGTH: 23	
<212> TYPE: DNA	
<213> ORGANISM: Homo Sapiens	
<400> SEQUENCE: 7	
catgtataaca ctgcggaaatc ttc	23
<210> SEQ ID NO 8	
<211> LENGTH: 23	
<212> TYPE: DNA	
<213> ORGANISM: Homo Sapiens	
<400> SEQUENCE: 8	
catgtataaaa ccccaacatc ctc	23
<210> SEQ ID NO 9	
<211> LENGTH: 40	
<212> TYPE: DNA	
<213> ORGANISM: Homo Sapiens	
<400> SEQUENCE: 9	
ggggccaggc ggcgcgagctc gtgtgtgacgc agccggccctc	40
<210> SEQ ID NO 10	
<211> LENGTH: 40	
<212> TYPE: DNA	
<213> ORGANISM: Homo Sapiens	
<400> SEQUENCE: 10	
ggggccaggc ggcgcgagctc gtgtgtgactc agccaccctc	40

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 4 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

<210> SEQ ID NO 11	
<211> LENGTH: 43	
<212> TYPE: DNA	
<213> ORGANISM: Homo Sapiens	
<400> SEQUENCE: 11	
ggggccaggc ggccgagctc gccctgactc agcctccctc cgt	43
<210> SEQ ID NO 12	
<211> LENGTH: 46	
<212> TYPE: DNA	
<213> ORGANISM: Homo Sapiens	
<400> SEQUENCE: 12	
ggggccaggc ggccgagctc gagctgactc agccaccctc agtgtc	46
<210> SEQ ID NO 13	
<211> LENGTH: 40	
<212> TYPE: DNA	
<213> ORGANISM: Homo Sapiens	
<400> SEQUENCE: 13	
ggggccaggc ggccgagctc gtgctgactc aatcgccctc	40
<210> SEQ ID NO 14	
<211> LENGTH: 40	
<212> TYPE: DNA	
<213> ORGANISM: Homo Sapiens	
<400> SEQUENCE: 14	
ggggccaggc ggccgagctc atgctgactc agccccactc	40
<210> SEQ ID NO 15	
<211> LENGTH: 40	
<212> TYPE: DNA	
<213> ORGANISM: Homo Sapiens	
<400> SEQUENCE: 15	
ggggccaggc ggccgagctc gggcagactc agcagctctc	40

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

REV 27/2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 5 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

<210> SEQ ID NO 16	
<211> LENGTH: 40	
<212> TYPE: DNA	
<213> ORGANISM: Homo Sapiens	
<400> SEQUENCE: 16	
ggggccaggc ggccgagctc gtggtgacyc aggagccmtc	40
<210> SEQ ID NO 17	
<211> LENGTH: 40	
<212> TYPE: DNA	
<213> ORGANISM: Homo Sapiens	
<400> SEQUENCE: 17	
ggggccaggc ggccgagctc gtgctgactc agccacccatc	40
<210> SEQ ID NO 18	
<211> LENGTH: 21	
<212> TYPE: DNA	
<213> ORGANISM: Homo Sapiens	
<400> SEQUENCE: 18	
gcagtaataa tcagcctcrt c	21
<210> SEQ ID NO 19	
<211> LENGTH: 44	
<212> TYPE: DNA	
<213> ORGANISM: Homo Sapiens	
<400> SEQUENCE: 19	
gctgccaac cagccatggc ccaggtgcag ctgggtgcagt ctgg	44
<210> SEQ ID NO 20	
<211> LENGTH: 44	
<212> TYPE: DNA	
<213> ORGANISM: Homo Sapiens	
<400> SEQUENCE: 20	
gctgccaac cagccatggc ccagatcacc ttgaaggagt ctgg	44

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 6 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

<210> SEQ ID NO 21
<211> LENGTH: 44
<212> TYPE: DNA
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 21
gctgccaac cagccatggc cgaggtgcag ctggtgsgat ctgg 44

<210> SEQ ID NO 22
<211> LENGTH: 44
<212> TYPE: DNA
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 22
gctgccaac cagccatggc ccaggtgcag ctgcaggagt cggg 44

<210> SEQ ID NO 23
<211> LENGTH: 24
<212> TYPE: DNA
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 23
cgcacagtaa tacacggccg tgtc 24

<210> SEQ ID NO 24
<211> LENGTH: 21
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence

<220> FEATURE:
<223> OTHER INFORMATION: PCR Primer for PelB Leader Sequence

<400> SEQUENCE: 24
acctattgcc tacggcagcc g 21

<210> SEQ ID NO 25
<211> LENGTH: 24
<212> TYPE: DNA
<213> ORGANISM: Homo Sapiens

```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 7 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

<400> SEQUENCE: 25
cgcacagtaa tacacggccg tgc 24

<210> SEQ ID NO 26
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 26
Asp Thr Ala Val Tyr Tyr Cys Ala
1 5

<210> SEQ ID NO 27
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Mus Musculus

<400> SEQUENCE: 27
Asp Thr Ala Met Tyr Tyr Cys Ala
1 5

<210> SEQ ID NO 28
<211> LENGTH: 69
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence

<220> FEATURE:
<223> OTHER INFORMATION: Synthetic PCR Primer

<400> SEQUENCE: 28
gacacggccg tgttattactg tgcgcgtcat aactacggca gttttgctta ctggggccag 60
ggaaccctg 69

<210> SEQ ID NO 29
<211> LENGTH: 42
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence

```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 8 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

<220> FEATURE:
<223> OTHER INFORMATION: Synthetic PCR Primer

<400> SEQUENCE: 29
gaggaggagg aggagactag ttttgtcaca agatggggc tc 42

<210> SEQ ID NO 30
<211> LENGTH: 73
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence

<220> FEATURE:
<223> OTHER INFORMATION: Synthetic PCR Primer

<400> SEQUENCE: 30
gaagattttc cagtttattt ctggcccaaca gagtaacagc tggcctcaca cgtttggcca 60
ggggaccaag ctg 73

<210> SEQ ID NO 31
<211> LENGTH: 21
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence

<220> FEATURE:
<223> OTHER INFORMATION: Synthetic PCR Primer

<400> SEQUENCE: 31
aatacgcactc actatagggc g 21

<210> SEQ ID NO 32
<211> LENGTH: 72
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence

<220> FEATURE:
<223> OTHER INFORMATION: Synthetic PCR Primer

<400> SEQUENCE: 32
gaggatgtt gggtttattt ctggccaaacag agtaacagct ggcctcacac gtttggccag 60
gggaccaagc tg 72

```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

12/14/08

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 9 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```
<210> SEQ ID NO 33
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens
```

```
<400> SEQUENCE: 33
Glu Asp Phe Ala Val Tyr Tyr Cys
 1           5
```

```
<210> SEQ ID NO 34
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens
```

```
<400> SEQUENCE: 34
Glu Asp Val Gly Val Tyr Tyr Cys
 1           5
```

```
<210> SEQ ID NO 35
<211> LENGTH: 69
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence
```

```
<220> FEATURE:
<223> OTHER INFORMATION: Synthetic PCR Primer
```

```
<400> SEQUENCE: 35
gayaggctg attatactg ccaacagagt aacagctggc ctcacacgtt cggcgaggg 60
69
accaagctg
```

```
<210> SEQ ID NO 36
<211> LENGTH: 50
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence
```

```
<220> FEATURE:
<223> OTHER INFORMATION: Synthetic PCR Primer
```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 10 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

<400> SEQUENCE: 36
agagagagag agagagagag cggcgtag aattatgaac attctgttagg 50

<210> SEQ ID NO 37
<211> LENGTH: 7
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 37
Asp Glu Ala Asp Tyr Tyr Cys
1 5

<210> SEQ ID NO 38
<211> LENGTH: 7
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 38
Phe Gly Gly Gly Thr Lys Leu
1 5

<210> SEQ ID NO 39
<211> LENGTH: 22
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence

<220> FEATURE:
<223> OTHER INFORMATION: Synthetic PCR Primer

<400> SEQUENCE: 39
aagacagcta tcgcgattgc ag 22

<210> SEQ ID NO 40
<211> LENGTH: 41
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence

```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 11 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

<220> FEATURE:	
<223> OTHER INFORMATION: Synthetic PCR Primer	
<400> SEQUENCE: 40	
gaggaggagg aggaggaggc gggcccccagg cggccgagct c	41
<210> SEQ ID NO 41	
<211> LENGTH: 21	
<212> TYPE: DNA	
<213> ORGANISM: Artificial Sequence	
<220> FEATURE:	
<223> OTHER INFORMATION: Synthetic PCR Primer	
<400> SEQUENCE: 41	
ggccatggct gggtggcag c	21
<210> SEQ ID NO 42	
<211> LENGTH: 42	
<212> TYPE: DNA	
<213> ORGANISM: Artificial Sequence	
<220> FEATURE:	
<223> OTHER INFORMATION: Synthetic PCR Primer	
<400> SEQUENCE: 42	
gcagagccca aatcttgtga cactagtggc caggccggcc ag	42
<210> SEQ ID NO 43	
<211> LENGTH: 41	
<212> TYPE: DNA	
<213> ORGANISM: Artificial Sequence	
<220> FEATURE:	
<223> OTHER INFORMATION: Synthetic PCR Primer	
<400> SEQUENCE: 43	
gaggaggagg aggaggaggc tggccggcct ggccactagt g	41

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 12 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

<210> SEQ ID NO 44
<211> LENGTH: 130
<212> TYPE: PRT
<213> ORGANISM: Mus Musculus

<400> SEQUENCE: 44
Leu Glu Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly Ser Leu Lys
 1      5      10      15
Leu Ser Cys Ala Ala Ser Gly Phe Ala Phe Ser Ser Tyr Asp Met Ser
 20      25      30
Trp Val Arg Gln Ile Pro Glu Lys Arg Leu Glu Trp Val Ala Lys Val
 35      40      45
Ser Ser Gly Gly Ser Thr Tyr Tyr Leu Asp Thr Val Gln Gly Arg
 50      55      60
Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln Met
 65      70      75      80
Ser Ser Leu Asn Ser Glu Asp Thr Ala Met Tyr Tyr Cys Ala Arg His
 85      90      95
Asn Tyr Gly Ser Phe Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr Val
100      105      110
Ser Ala Ala Lys Thr Thr Pro Pro Ser Val Tyr Pro Leu Ala Pro Gly
115      120      125
Ser Ala
130

```

```

<210> SEQ ID NO 45
<211> LENGTH: 109
<212> TYPE: PRT
<213> ORGANISM: Mus Musculus

<400> SEQUENCE: 45
Glu Leu Val Met Thr Gln Thr Pro Ala Thr Leu Ser Val Thr Pro Gly
 1      5      10      15
Asp Ser Val Ser Leu Ser Cys Arg Ala Ser Gln Ser Ile Ser Asn His
 20      25      30
Leu His Trp Tyr Gln Gln Lys Ser His Glu Ser Pro Arg Leu Leu Ile
 35      40      45
Lys Tyr Ala Ser Gln Ser Ile Ser Gly Ile Pro Ser Arg Phe Ser Gly
 50      55      60

```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.

20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

10/11/2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 13 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

Ser Gly Ser Gly Thr Asp Phe Thr Leu Ser Ile Asn Ser Val Glu Thr
65          70          75          80
Glu Asp Phe Gly Met Tyr Phe Cys Gln Gln Ser Asn Ser Trp Pro His
85          90          95
Thr Phe Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala
100         105

```

<210> SEQ ID NO 46
<211> LENGTH: 57
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence

<220> FEATURE:
<223> OTHER INFORMATION: Synthetic PCR Primer

<221> NAME/KEY: misc_feature
<222> LOCATION: (1)...(57)
<223> OTHER INFORMATION: n= A, T, C, or G

<400> SEQUENCE: 46
ggccccctgg ccaaacgtgt gaggmnnnnnn mnmmnnctgt tggcagtaat acactgc 57

<210> SEQ ID NO 47
<211> LENGTH: 23
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence

<220> FEATURE:
<223> OTHER INFORMATION: Synthetic PCR Primer

<400> SEQUENCE: 47
cctcaccgtt tggccaggg acc

<210> SEQ ID NO 48
<211> LENGTH: 21
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence

23

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
20 North Wacker Drive, 36th Floor
Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 14 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

<220> FEATURE:
<223> OTHER INFORMATION: Synthetic PCR Primer

<400> SEQUENCE: 48
agaagcgtag tccggAACGT C 21

<210> SEQ ID NO 49
<211> LENGTH: 109
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence

<220> FEATURE:
<223> OTHER INFORMATION: Hybrid mouse - human sequence

<400> SEQUENCE: 49
Glu Leu Val Met Thr Gln Ser Pro Glu Phe Gln Ser Val Thr Pro Lys
 1           5           10          15
Glu Thr Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Gly Thr Ser
 20          25          30
Leu His Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Ile
 35          40          45
Lys Tyr Ala Ser Gln Pro Val Phe Gly Val Pro Ser Arg Phe Arg Gly
 50           55          60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Tyr Ser Leu Glu Ala
 65           70          75          80
Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Ser Asn Ser Trp Pro His
 85           90          95
Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr
 100          105

```

```

<210> SEQ ID NO 50
<211> LENGTH: 118
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence

<220> FEATURE:
<223> OTHER INFORMATION: Hybrid mouse - human sequence

<400> SEQUENCE: 50

```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 15 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
 1           5           10          15
Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Ala Ser Ile Ser Arg Gly
 20          25          30
Gly Tyr Tyr Trp Ser Trp Ile Arg Gln Tyr Pro Gly Lys Gly Leu Glu
 35          40          45
Trp Ile Gly Tyr Ile His His Ser Gly Ser Thr Tyr Tyr Asn Pro Ser
 50          55          60
Leu Lys Ser Arg Val Thr Ile Ala Ile Asp Thr Ser Lys Asn Gln Leu
 65          70          75          80
Ser Leu Arg Leu Thr Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
 85          90          95
Cys Ala Arg His Asn Tyr Gly Ser Phe Ala Tyr Trp Gly Gln Gly Thr
100          105         110
Leu Val Thr Val Ser Ser
115

```

```

<210> SEQ ID NO 51
<211> LENGTH: 118
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence

```

```

<220> FEATURE:
<223> OTHER INFORMATION: Hybrid mouse - human sequence

```

```

<400> SEQUENCE: 51
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
 1           5           10          15
Thr Leu Phe Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Gly
 20          25          30
Gly Tyr Tyr Trp Ser Trp Ile Arg His His Pro Gly Lys Gly Leu Glu
 35          40          45
Trp Ile Gly Tyr Ile His His Arg Ala Ala Pro Tyr Tyr Asn Pro Ser
 50          55          60
Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Arg Asn Gln Ile
 65          70          75          80
Ser Leu Lys Leu Arg Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
 85          90          95

```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 16 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

Cys Ala Arg His Asn Tyr Gly Ser Phe Ala Tyr Trp Gly Gln Gly Thr
100          105          110
Leu Val Thr Val Ser Ser
115

```

```

<210> SEQ ID NO 52
<211> LENGTH: 118
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence

<220> FEATURE:
<223> OTHER INFORMATION: Hybrid mouse - human sequence

```

```

<400> SEQUENCE: 52
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
1          5          10          15
Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Gly
20          25          30
Gly Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu
35          40          45
Trp Ile Gly Tyr Ile His His Ser Ala Gly Thr Tyr Tyr Asn Pro Ser
50          55          60
Leu Lys Ser Arg Val Thr Met Ser Val Asp Thr Ser Lys Asn Gln Leu
65          70          75          80
Ser Leu Lys Leu Thr Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
85          90          95
Cys Ala Arg His Asn Tyr Gly Ser Phe Ala Tyr Trp Gly Gln Gly Thr
100         105         110
Leu Val Thr Val Ser Ser
115

```

```

<210> SEQ ID NO 53
<211> LENGTH: 118
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence

<220> FEATURE:
<223> OTHER INFORMATION: Hybrid mouse - human sequence

```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
20 North Wacker Drive, 36th Floor
Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

12.27.2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 17 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

<400> SEQUENCE: 53
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
1 5 10 15
Thr Leu Ser Leu Thr Cys Ser Val Ser Gly Gly Ser Ile Ser Ser Gly
20 25 30
Gly Tyr Tyr Trp Ser Trp Ile Arg His His Pro Gly Lys Gly Leu Glu
35 40 45
Trp Ile Gly Tyr Ile His His Ser Ala Gly Thr Tyr Tyr Asn Pro Ser
50 55 60
Leu Lys Ser Arg Val Thr Met Ser Ala Asp Thr Ser Lys Asn Gln Leu
65 70 75 80
Ser Leu Lys Leu Ala Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
85 90 95
Cys Ala Arg His Asn Tyr Gly Ser Phe Ala Tyr Trp Gly Gln Gly Thr
100 105 110
Leu Val Thr Val Ser Ser
115

```

```

<210> SEQ ID NO 54
<211> LENGTH: 117
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence

```

```

<220> FEATURE:
<223> OTHER INFORMATION: Hybrid mouse - human sequence

```

```

<400> SEQUENCE: 54
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Arg Lys Pro Gly Ser
1 5 10 15
Ser Val Arg Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Ser Gly Phe
20 25 30
Ala Val Ser Trp Val Arg Gln Ala Pro Gly Gln Arg Phe Glu Trp Leu
35 40 45
Gly Gly Ile Val Ala Ser Leu Gly Ser Thr Asp Tyr Ala Gln Lys Phe
50 55 60
Gln Asp Lys Leu Thr Ile Thr Val Asp Glu Ser Thr Ala Thr Val Tyr
65 70 75 80
Met Glu Met Arg Asn Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys
85 90 95

```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
20 North Wacker Drive, 36th Floor
Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 18 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```
Ala Arg His Asn Tyr Gly Ser Phe Ala Tyr Trp Gly Gln Gly Thr Leu.
 100          105          110
Val Thr Val Ser Ser
 115
```

```
<210> SEQ ID NO 55
<211> LENGTH: 109
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
```

```
<220> FEATURE:
<223> OTHER INFORMATION: Hybrid mouse - human sequence
```

```
<400> SEQUENCE: 55
Glu Leu Val Met Thr Gln Ser Pro Glu Phe Gln Ser Val Thr Pro Lys
 1          5          10          15
Glu Thr Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Gly Asn Ser
 20         25         30
Leu His Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile
 35         40         45
Lys Tyr Ala Ser Gln Pro Val Phe Gly Val Pro Ser Arg Phe Arg Gly
 50         55         60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Arg Leu Glu Pro
 65         70         75         80
Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Ser Asn Ser Trp Pro His
 85         90         95
Thr Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr
 100        105
```

```
<210> SEQ ID NO 56
<211> LENGTH: 117
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens
```

```
<400> SEQUENCE: 56
Glu Val Gln Leu Glu Glu Ser Gly Gly Leu Val Lys Pro Gly Gly
 1          5          10          15
```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 19 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Ala Phe Ser Ser Tyr
20          25          30
Asp Met Ser Trp Val Arg Gln Ile Pro Glu Lys Arg Leu Glu Trp Val
35          40          45
Ala Lys Val Ser Ser Gly Gly Ser Thr Tyr Tyr Leu Asp Thr Val
50          55          60
Gln Gly Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr
65          70          75          80
Leu Gln Met Ser Ser Leu Asn Ser Glu Asp Thr Ala Met Tyr Tyr Cys
85          90          95
Ala Arg His Asn Tyr Gly Ser Phe Ala Tyr Trp Gly Gln Gly Thr Leu
100         105         110
Val Thr Val Ser Ala
115

```

```

<210> SEQ ID NO 57
<211> LENGTH: 4
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

```

```

<400> SEQUENCE: 57
Glu Arg Ala Thr
1

```

```

<210> SEQ ID NO 58
<211> LENGTH: 4
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

```

```

<400> SEQUENCE: 58
Glu Arg Gly Ser
1

```

```

<210> SEQ ID NO 59
<211> LENGTH: 5
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
20 North Wacker Drive, 36th Floor
Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTIONPage 20 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

<400> SEQUENCE: 59
Ser Ser Thr Leu Ala
 1           5

<210> SEQ ID NO 60
<211> LENGTH: 5
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 60
Ser Ser Phe Leu Ala
 1           5

<210> SEQ ID NO 61
<211> LENGTH: 7
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 61
Val Thr Ser Ser Tyr Leu Ala
 1           5

<210> SEQ ID NO 62
<211> LENGTH: 4
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 62
Pro Gly Gln Ala
 1

<210> SEQ ID NO 63
<211> LENGTH: 4
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
20 North Wacker Drive, 36th Floor
Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

REC'D 8/11/06

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 21 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

<400> SEQUENCE: 63
Pro Gly Lys Ala
1

<210> SEQ ID NO 64
<211> LENGTH: 4
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 64
Ser Arg Ala Thr
1

<210> SEQ ID NO 65
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Mus Musculus

<400> SEQUENCE: 65
Arg Ala Ser Gln Ser Ile Ser Asn
1           5

<210> SEQ ID NO 66
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Mus Musculus

<400> SEQUENCE: 66
Lys Tyr Ala Ser Gln Ser Ile Ser
1           5

<210> SEQ ID NO 67
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 22 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```
<400> SEQUENCE: 67
Arg Ala Ser Gln Asp Ile Gly Thr
1 5
```

```
<210> SEQ ID NO 68
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens
```

```
<400> SEQUENCE: 68
Lys Tyr Ala Ser Gln Pro Val Phe
1 5
```

```
<210> SEQ ID NO 69
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens
```

```
<400> SEQUENCE: 69
Arg Ala Ser Gln Asp Ile Gly Asn
1 5
```

```
<210> SEQ ID NO 70
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens
```

```
<400> SEQUENCE: 70
Arg Ala Ser Gln Ser Ile Gly Trp
1 5
```

```
<210> SEQ ID NO 71
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens
```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 23 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```
<400> SEQUENCE: 71
Lys Tyr Ala Ser Gln Ser Ile Ser
 1           5
```

```
<210> SEQ ID NO 72
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens
```

```
<400> SEQUENCE: 72
Arg Ser Ser Gln Ser Ile Asn Ile
 1           5
```

```
<210> SEQ ID NO 73
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens
```

```
<400> SEQUENCE: 73
Tyr His Ala Ser Lys Arg Ala Ser
 1           5
```

```
<210> SEQ ID NO 74
<211> LENGTH: 9
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens
```

```
<400> SEQUENCE: 74
Arg Ala Ser Gln Ser Val Ser Asn Asn
 1           5
```

```
<210> SEQ_ID NO 75
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens
```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 24 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

<400> SEQUENCE: 75
 Tyr Arg Ala Ser Ser Arg Ala Thr
 1 5

<210> SEQ ID NO 76
 <211> LENGTH: 13
 <212> TYPE: PRT
 <213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 76
 Arg Ser Ser Gln Ser Leu Val Tyr Ser Asp Gly Asn Thr
 1 5 10

<210> SEQ ID NO 77
 <211> LENGTH: 8
 <212> TYPE: PRT
 <213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 77
 Tyr Lys Val Ser Asn Arg Asp Ser
 1 5

<210> SEQ ID NO 78
 <211> LENGTH: 13
 <212> TYPE: PRT
 <213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 78
 Tyr Ala Ser Gln Ser Leu Val Tyr Thr Asp Gly Asn Thr
 1 5 10

<210> SEQ ID NO 79
 <211> LENGTH: 8
 <212> TYPE: PRT
 <213> ORGANISM: Homo Sapiens

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 25 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

<400> SEQUENCE: 79
 Tyr Met Val Ser Asn Arg Asp Ser
 1 5

<210> SEQ ID NO 80
 <211> LENGTH: 23
 <212> TYPE: PRT
 <213> ORGANISM: Mus Musculus

<400> SEQUENCE: 80
 Glu Leu Val Met Thr Gln Thr Pro Ala Thr Leu Ser Val Thr Pro Gly
 1 5 10 15
 Asp Ser Val Ser Leu Ser Cys
 20

<210> SEQ ID NO 81
 <211> LENGTH: 23
 <212> TYPE: PRT
 <213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 81
 Glu Leu Val Met Thr Gln Ser Pro Glu Phe Gln Ser Val Thr Pro Lys
 1 5 10 15
 Glu Thr Val Thr Ile Thr Cys
 20

<210> SEQ ID NO 82
 <211> LENGTH: 11
 <212> TYPE: PRT
 <213> ORGANISM: Mus Musculus

<400> SEQUENCE: 82
 Arg Ala Ser Gln Ser Ile Ser Asn His Leu His
 1 5 10

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.

20 North Wacker Drive, 36th Floor

Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 26 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

<210> SEQ ID NO 83
 <211> LENGTH: 11
 <212> TYPE: PRT
 <213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 83
 Arg Ala Ser Gln Asp Ile Gly Thr Ser Leu His
 1 5 10

<210> SEQ ID NO 84
 <211> LENGTH: 11
 <212> TYPE: PRT
 <213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 84
 Arg Ala Ser Gln Asp Ile Gly Asn Ser Leu His
 1 5 10

<210> SEQ ID NO 85
 <211> LENGTH: 15
 <212> TYPE: PRT
 <213> ORGANISM: Mus Musculus

<400> SEQUENCE: 85
 Trp Tyr Gln Gln Lys Ser His Glu Ser Pro Arg Leu Leu Ile Lys
 1 5 10 15

<210> SEQ ID NO 86
 <211> LENGTH: 15
 <212> TYPE: PRT
 <213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 86
 Trp Tyr Gln Gln Lys Pro Gly Gln Ser Pro Lys Leu Leu Ile Lys
 1 5 10 15

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTIONPage 27 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

<210> SEQ ID NO 87
<211> LENGTH: 7
<212> TYPE: PRT
<213> ORGANISM: Mus Musculus

<400> SEQUENCE: 87
Tyr Ala Ser Gln Ser Ile Ser
1 5

<210> SEQ ID NO 88
<211> LENGTH: 7
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 88
Tyr Ala Ser Gln Pro Val Phe
1 5

<210> SEQ ID NO 89
<211> LENGTH: 32
<212> TYPE: PRT
<213> ORGANISM: Mus Musculus

<400> SEQUENCE: 89
Gly Ile Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15
Leu Ser Ile Asn Ser Val Glu Thr Glu Asp Phe Gly Met Tyr Phe Cys
20 25 30

<210> SEQ ID NO 90
<211> LENGTH: 32
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
20 North Wacker Drive, 36th Floor
Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 28 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

<400> SEQUENCE: 90
Gly Val Pro Ser Arg Phe Arg Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15
Leu Thr Ile Tyr Ser Leu Glu Ala Glu Asp Phe Ala Val Tyr Tyr Cys
20 25 30

<210> SEQ ID NO 91
<211> LENGTH: 32
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 91
Gly Val Pro Ser Arg Phe Arg Gly Ser Gly Ser Gly Thr Asp Phe Thr
1 5 10 15
Leu Thr Ile Ser Arg Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys
20 25 30

<210> SEQ ID NO 92
<211> LENGTH: 12
<212> TYPE: PRT
<213> ORGANISM: Mus Musculus

<400> SEQUENCE: 92
Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys Arg Ala
1 5 10

<210> SEQ ID NO 93
<211> LENGTH: 12
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 93
Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg Thr
1 5 10

```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 29 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

<210> SEQ ID NO 94
<211> LENGTH: 30
<212> TYPE: PRT
<213> ORGANISM: Mus Musculus

<400> SEQUENCE: 94
Glu Val Gln Leu Glu Glu Ser Gly Gly Gly Leu Val Lys Pro Gly Gly
1           5           10          15
Ser Leu Lys Leu Ser Cys Ala Ala Ser Gly Phe Ala Phe Ser
20          25          30

<210> SEQ ID NO 95
<211> LENGTH: 30
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 95
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Arg Lys Pro Gly Ser
1           5           10          15
Ser Val Arg Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Ser
20          25          30

<210> SEQ ID NO 96
<211> LENGTH: 30
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 96
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
1           5           10          15
Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Ala Ser Ile Ser
20          25          30

<210> SEQ ID NO 97
<211> LENGTH: 30
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 30 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```
<400> SEQUENCE: 97
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
1 5 10 15
Thr Leu Phe Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser
20 25 30
```

```
<210> SEQ ID NO 98
<211> LENGTH: 30
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens
```

```
<400> SEQUENCE: 98
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
1 5 10 15
Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser
20 25 30
```

```
<210> SEQ ID NO 99
<211> LENGTH: 30
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens
```

```
<400> SEQUENCE: 99
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
1 5 10 15
Thr Leu Ser Leu Thr Cys Ser Val Ser Gly Gly Ser Ile Ser
20 25 30
```

```
<210> SEQ ID NO 100
<211> LENGTH: 5
<212> TYPE: PRT
<213> ORGANISM: Mus Musculus
```

```
<400> SEQUENCE: 100
Ser Tyr Asp Met Ser
1 5
```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Nov 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 31 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

<210> SEQ ID NO 101
 <211> LENGTH: 5
 <212> TYPE: PRT
 <213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 101
 Gly Phe Ala Val Ser
 1 5

<210> SEQ ID NO 102
 <211> LENGTH: 7
 <212> TYPE: PRT
 <213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 102
 Arg Gly Gly Tyr Tyr Trp Ser
 1 5

<210> SEQ ID NO 103
 <211> LENGTH: 7
 <212> TYPE: PRT
 <213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 103
 Ser Gly Gly Tyr Tyr Trp Ser
 1 5

<210> SEQ ID NO 104
 <211> LENGTH: 14
 <212> TYPE: PRT
 <213> ORGANISM: Mus Musculus

<400> SEQUENCE: 104
 Trp Val Arg Gln Ile Pro Glu Lys Arg Leu Glu Trp Val Ala
 1 5 10

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTIONPage 32 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

<210> SEQ ID NO 105
<211> LENGTH: 14
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 105
Trp Val Arg Gln Ala Pro Gly Gln Arg Phe Glu Trp Leu Gly
 1           5           10

<210> SEQ ID NO 106
<211> LENGTH: 14
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 106
Trp Ile Arg Gln Tyr Pro Gly Lys Gly Leu Glu Trp Ile Gly
 1           5           10

<210> SEQ ID NO 107
<211> LENGTH: 14
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 107
Trp Ile Arg His His Pro Gly Lys Gly Leu Glu Trp Ile Gly
 1           5           10

<210> SEQ ID NO 108
<211> LENGTH: 14
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 108
Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu Trp Ile Gly
 1           5           10

```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
20 North Wacker Drive, 36th Floor
Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTIONPage 33 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

<210> SEQ ID NO 109
<211> LENGTH: 17
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 109
Gly Ile Val Ala Ser Leu Gly Ser Thr Asp Tyr Ala Gln Lys Phe Gln
1           5           10          15
Asp

<210> SEQ ID NO 110
<211> LENGTH: 16
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 110
Tyr Ile His His Ser Gly Ser Thr Tyr Tyr Asn Pro Ser Leu Lys Ser
1           5           10          15

<210> SEQ ID NO 111
<211> LENGTH: 16
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 111
Tyr Ile His His Arg Ala Ala Pro Tyr Tyr Asn Pro Ser Leu Lys Ser
1           5           10          15

<210> SEQ ID NO 112
<211> LENGTH: 16
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 112
Tyr Ile His His Ser Ala Gly Thr Tyr Tyr Asn Pro Ser Leu Lys Ser
1           5           10          15

```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
20 North Wacker Drive, 36th Floor
Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

REC'D 2/8/2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 34 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

<210> SEQ ID NO 113
<211> LENGTH: 32
<212> TYPE: PRT
<213> ORGANISM: Mus Musculus

<400> SEQUENCE: 113
Arg Phe Thr Ile Ser Arg Asp Asn Ala Lys Asn Thr Leu Tyr Leu Gln
 1           5           10          15
Met Ser Ser Leu Asn Ser Glu Asp Thr Ala Met Tyr Tyr Cys Ala Arg
 20          25           30

```

```

<210> SEQ ID NO 114
<211> LENGTH: 32
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 114
Lys Leu Thr Ile Thr Val Asp Glu Ser Thr Ala Thr Val Tyr Met Glu
 1           5           10          15
Met Arg Asn Leu Arg Ser Asp Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 20          25           30

```

```

<210> SEQ ID NO 115
<211> LENGTH: 32
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 115
Arg Val Thr Ile Ala Ile Asp Thr Ser Lys Asn Gln Leu Ser Leu Arg
 1           5           10          15
Leu Thr Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg
 20          25           30

```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 35 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```

<210> SEQ ID NO 116
<211> LENGTH: 32
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 116
Arg Val Thr Ile Ser Val Asp Thr Ser Arg Asn Gln Ile Ser Leu Lys
1 5 10 15
Leu Arg Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg
20 25 30

<210> SEQ ID NO 117
<211> LENGTH: 32
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 117
Arg Val Thr Met Ser Val Asp Thr Ser Lys Asn Gln Leu Ser Leu Lys
1 5 10 15
Leu Thr Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg
20 25 30

<210> SEQ ID NO 118
<211> LENGTH: 32
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens

<400> SEQUENCE: 118
Arg Val Thr Met Ser Ala Asp Thr Ser Lys Asn Gln Leu Ser Leu Lys
1 5 10 15
Leu Ala Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg
20 25 30

<210> SEQ ID NO 119
<211> LENGTH: 11
<212> TYPE: PRT
<213> ORGANISM: Mus Musculus

```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
 20 North Wacker Drive, 36th Floor
 Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTIONPage 36 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

```
<400> SEQUENCE: 119
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ala
 1           5           10
```

```
<210> SEQ ID NO 120
<211> LENGTH: 11
<212> TYPE: PRT
<213> ORGANISM: Homo Sapiens
```

```
<400> SEQUENCE: 120
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser
 1           5           10
```

```
<210> SEQ ID NO 121
<211> LENGTH: 9
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
```

```
<220> FEATURE:
<223> OTHER INFORMATION: LCDR3 variant portion

<221> NAME/KEY: VARIANT
<222> LOCATION: (3)...(6)
<223> OTHER INFORMATION: Xaa = any amino acid
```

```
<400> SEQUENCE: 121
Gln Gln Xaa Xaa Xaa Xaa Pro His Thr
 1           5
```

```
<210> SEQ ID NO 122
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
```

```
<220> FEATURE:
<223> OTHER INFORMATION: HCDR3 variant portion
```

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
20 North Wacker Drive, 36th Floor
Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 37 of 37

PATENT NO. : 7,087,409 B2

APPLICATION NO.: 10/078,757

ISSUE DATE : August 8, 2006

INVENTOR(S) : Carlos F. Barbas, III et al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

<221> NAME/KEY: VARIANT
<222> LOCATION: (1)...(4)
<223> OTHER INFORMATION: Xaa = any amino acid

<400> SEQUENCE: 122
Xaa Xaa Xaa Xaa Ser Phe Ala Tyr
1 5

MAILING ADDRESS OF SENDER (Please do not use customer number below):

OLSON & HIERL, LTD.
20 North Wacker Drive, 36th Floor
Chicago, Illinois 60606

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

NOV 27 2006